

US IOOS®

# Coastal and Ocean Modeling Testbed: Roundup and Progress

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# COMT Annual Updates and Highlights

- Accepted for another special issue of JGR. Expect to complete submissions by this Fall with ~12-15 articles.
- Each project produced a pre-transition plan to better coordinate and align with transition entities
- Considering new organization/business model for next award cycle (FY18)
  - Looking for opportunities to better connect with IOOS RA modeling expertise
- Evaluating option to transition regional specific ecological forecast products to IOOS Regional Association portals for demonstration or hosting of product longer term

# Chesapeake Bay Hypoxia

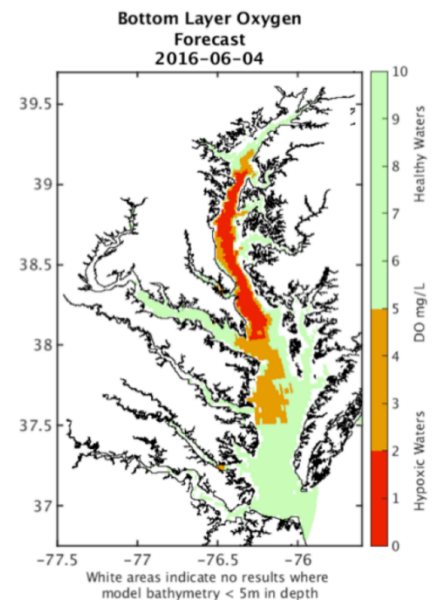
Objective: Assess suite of estuarine dissolved oxygen models to make recommendations for producing predictions of hypoxia within Chesapeake Bay

FY16:

- Stakeholder engagement sessions completed
- Transition Plan approved through LO
- DO code in Dev CBOFS

FY17:

- Work with MARACOOS to host demo product
- Provide any troubleshooting support to federal implementation team



# The West Coast Project

## Objectives:

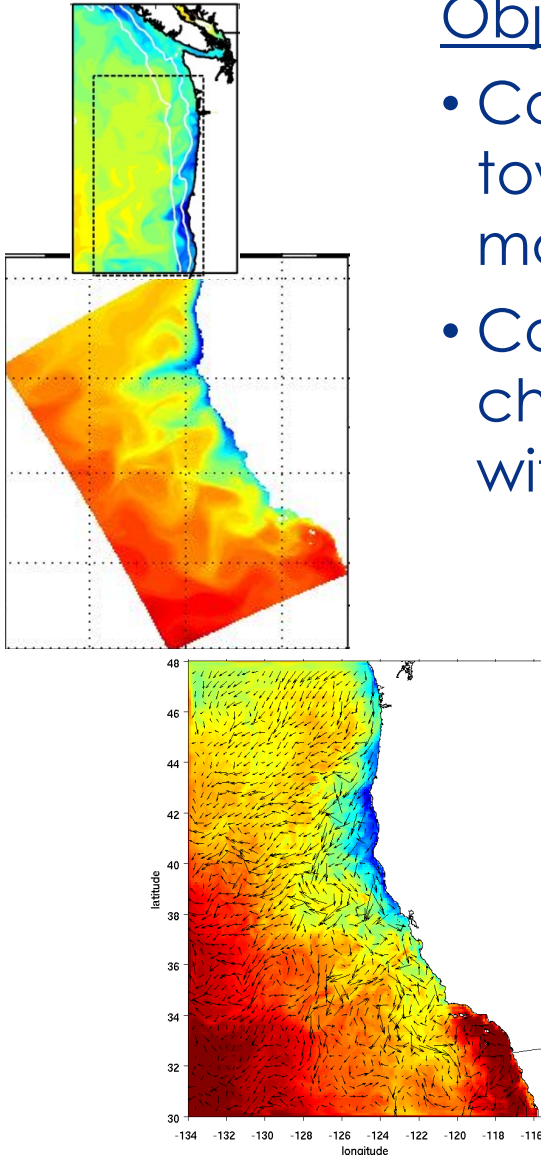
- Compare 3 ROMS based models as a step toward a coordinated super-regional modeling capability for the U.S. West Coast.
- Compare performance of 3 different bio-chemical models (NPZDO, NEMURO, COSINE) within a single ROMS domain.

## FY16:

- Non- DA WCOFS running in COMF
- DA code to CSDL for skill assessment
- Evaluated BGC in CA current system

## FY17:

- Complete Non-DA COMF testing in Jun
- Complete DA skill assessment
- BGC analysis in WCOFS domain



# Hypoxia Prediction in the Northern Gulf of Mexico

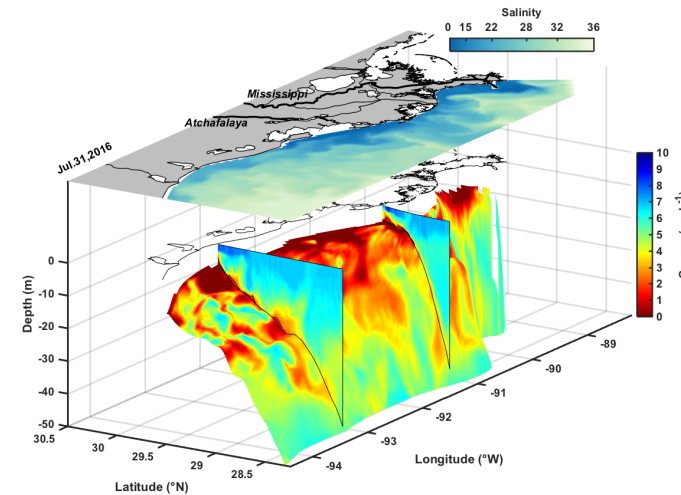
Objective: Implement and demonstrate a real-time hypoxia forecasting system applicable to the hypoxia-prone Northern Gulf of Mexico.

FY16:

- Conducted short notice multi-model hindcast of 2016 hypoxia season

FY17:

- Complete evaluation and make recommendations for ROMS implementation at CO-OPS or other host entity



Fennel et al. report to NCCOS (2016)



# Puerto Rico/U.S. Virgin Islands Surge and Wave Inundation

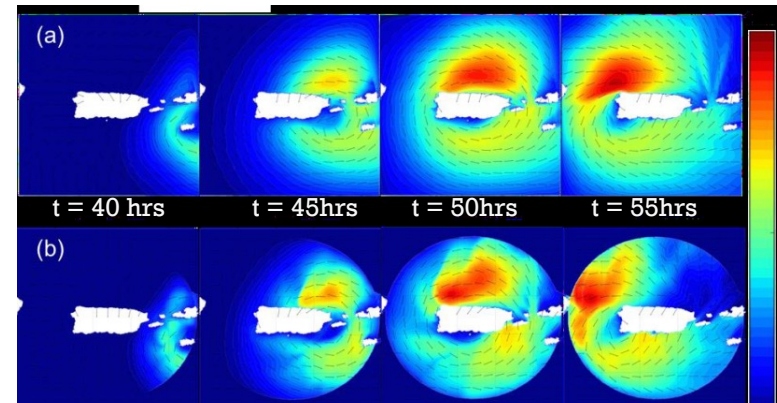
Objectives: Extend wave/surge operational forecasting capability from mild-sloped coastal areas to steep-sloped areas such as around Caribbean and Pacific islands

## FY 16:

- Sensitivity testing for wind forcing and wave model configuration

## FY17:

- USACE transitioning model mesh grid for PR/USVI to use for Southern Region Domain
- Transition ADCIRC-SWAN model to NOS Vdatum modeling suite to improve tidal datum estimates in region



Comparison of significant wave height and wave direction fields during Hurricane Georges (1998). Row (a): Time series of SWAN output; Row (b): Time series of parametric wave model output.

# Cyberinfrastructure for COMT

## Objective:

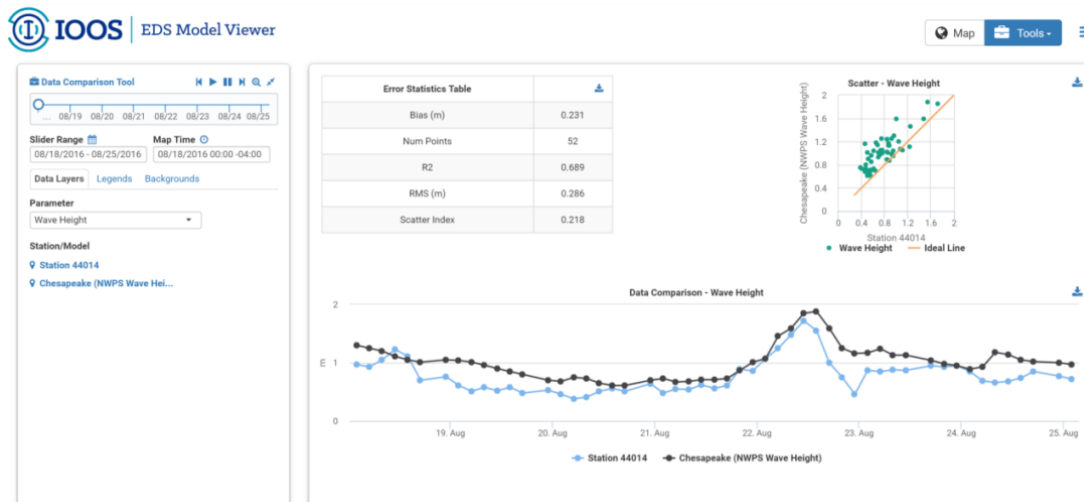
- Improve function and performance of SciWMS so it can be used to visualize all compliant model results and observational data stored on the COMT archive server
- Develop a SciWMS based web client to perform the visualization

## FY16:

- Compliance checker completed
- PARR

## FY17:

- New COMT Website for project information exchange and long term data set access



# COMT FY16 Transition Metrics

| Major Tests Conducted                                     | Transitioned to Operations<br><br>(RL9) | Recommended for Transition to Operations<br><br>(RL9) | Advanced To Experimental Testing<br><br>(RL8) | Further Demonstration/ Development<br><br>(RL 5-7) | Notes   |
|---|---|---|---|--|---|
| Chesapeake Bay Hypoxia Forecast Product                   |   |   | X   |  | - DO code in CBOFS dev<br>- Pilot product hosted at VIMS            |
| West Coast Operational Forecast System (WCOFS)            |   |   | X   | X  | -Non-DA advanced to testing at CO-OPS<br>-DA furthering development |
| Hypoxia Prediction in the Northern Gulf of Mexico         |   |   |   | X  |   |
| Puerto Rico/U.S. Virgin Islands Surge and Wave Inundation |   |   |   | X  |   |
| Cyber Infrastructure                                      |   |   |   |  |   |



# Thank You

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<https://ioos.noaa.gov/project/comt/>

<https://comt.ioos.us/map/>



# COMT Lessons Learned

- Engage early and often with relevant players
- Understand requirements
- Think outside the box
- Communicate, Communicate, Communicate